

WHAT IS CLAIMED IS:

1. A speckle interferometer apparatus for dividing a luminous flux from a light source into two luminous fluxes, irradiating a rough object surface acting as a surface to be measured with the two luminous fluxes, causing respective reflected luminous fluxes of the two luminous fluxes from the rough object surface to interfere with each other, and capturing an image of an interference speckle pattern formed by the interference;

the apparatus comprising:

a luminous flux dividing device which divides the luminous flux from the light source into the two luminous fluxes;

two luminous flux outputting devices which outputs the respective divided luminous fluxes toward the rough object surface; and

an optical member mounting device, disposed on the rough object surface side of a main unit of an imaging device which captures the image of the interference speckle pattern while being separated from the imaging device, which mounts the luminous flux dividing device and luminous flux outputting devices;

wherein a predetermined area of the optical member mounting device located between the two luminous flux outputting devices is a light-transmitting area which transmits therethrough interference light from the rough object surface.

2. A speckle interferometer apparatus according to claim 1, wherein the optical member mounting device is mounted with an optical path length difference providing device which provides a predetermined optical path length difference between optical paths of the two luminous fluxes divided by the luminous flux dividing device.

3. A speckle interferometer apparatus according to claim 1, wherein the optical member mounting device is formed like a plate.

4. A speckle interferometer apparatus according to claim 1, wherein the two luminous flux outputting devices are substantially disposed so as to oppose each other across the light-transmitting area in a predetermined direction.

5. A speckle interferometer apparatus according to claim 1, comprising two sets each of the two luminous flux outputting devices, the respective predetermined directions of the two luminous flux outputting devices in the two sets being substantially orthogonal to each other.

6. A speckle interferometer apparatus according to claim 5, wherein two sets of the two luminous flux outputting devices are regulated such that one group can output the luminous flux alone or such that the two sets can alternately output the luminous fluxes.

7. A speckle interferometer apparatus according to claim 1, wherein the light-transmitting area is a through hole formed in the optical member mounting device.

8. A speckle interferometer apparatus according to claim 1, wherein the light-transmitting area is a transparent plate constituting at least a part of the optical member mounting device.

9. A speckle interferometer apparatus according to claim 1, wherein an optical member mounted on the optical member mounting device has a layered structure near the light-transmitting area.

10. A speckle interferometer apparatus according to claim 9, wherein the layered structure comprises three floors.